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EXAMINER	
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2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/714,106	CAIN ET AL.	
	Examiner	Art Unit	
	IAN N. MOORE	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6,7,10-17,20,21,26,30 and 31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6,7,10-17,20,21,26,30,31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is noted, and accordingly the finality of that action is withdrawn in view of new grounds of rejections.

Claim Rejections - 35 USC § 112- First paragraph

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 6 recites, "**inserting the media gateway control command into an IP packet"** in line 6.

Per FIG. 3, HDLC frame contains information filed 308 where control command packet 400 (see FIG. 4) is inserted. Per FIG. 4, management command packet 400 where payload field 404 is either IP packet or control command, as indicated by command flag 408 (see specification page 12-13). The speciation discloses control command and IP packet as two separated protocols indicated by command flag 408, and certainly per specification the control command is not inserted into IP packet as claimed. The specification fails to provide how IP

packet and command packet are both inserted in the payload since they are two different types of protocol packets. Thus, the specification fails to disclose media gateway control commands is being inserted and carried within an IP packet.

Claim Rejections - 35 USC § 112- second paragraph

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites, "**inserting <u>the media gateway control command</u> into <u>an IP packet</u>; inserting <u>the media gateway control command</u> into <u>a command packet</u>"** in lines 6-7, and "inserting the media gateway control command into the command packet **includes inserting IP packet"**. Thus, it is unclear whether a media gateway control command is inserted into "an IP packet" or "a command packet".

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US006671367B1) in view of Araujo (US006097720A), and further in view of Masuda (US006678474B1).

Regarding Claim 6, Graf discloses a method for transmitting a media gateway control command (see FIG. 3, control command; see col. 8, line 6-15; see col. 9, line 27-40) from a media gateway controller (see FIG. 3, MGC_B (Media Gateway Controller)) to a remote media gateway (see FIG. 3, MG_4 (Media Gateway 4)) using a protocol (see FIG. 3, STM (Synchronous Transfer Mode) protocol see col. 9, line 25-29), the method comprising:

(a) generating the media gateway control command (see FIG. 3, sending/generating control command (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9, line 27-65);

(b) the media gateway control command (see FIG. 3, control command (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9, line 27-65);

(c) forming the command packet (see FIG. 3, forming/generating control command packet/frame (i.e. MEGACO or H.248 command); see col. 2, line 1-4; see col. 9, line 27-65);

(e) transmitting the frame to a media gateway (see FIG. 3, MG_3 transmits STM frame to MG_4) using a time division multiplexed (TDM) channel (see FIG. 3, using a TDM channel which embedded/carried within STM (Synchronous Transfer Mode) network (e.g. ISDN, T1, E1, SDH, SONET); see col. 9, line 25-29).

Graf does not explicitly disclose "a high-level datalink control (HDLC) protocol, (c) inserting the control command into a command packet; a packet header portion and a packet payload portion, and a command flag in the packet header portion that indicates a type of

payload contained in the packet payload portion, and (d) inserting the command packet into an HDLC frame (e) the HDLC frame".

However, Araujo teaches

(b) inserting a control command (see FIG. 2, adding/encapsulating/inserting Information 101 (i.e. IP packet with command/signaling/header information)) into a packet (see FIG. 2, into a PPP packet which contains command/signaling/header information; see col. 7, line 31-50);

(c) inserting a control command (see FIG. 2, adding/encapsulating/inserting Information 101 (i.e. IP packet with command/signaling/header information)) into a command packet (see FIG. 2, into a PPP packet which contains command/signaling/header information; see col. 7, line 31-50), wherein inserting the control common into the command packet includes

forming the forming the command packet (see FIG. 2, forming/creating PPP packet) having a packet header portion (see FIG. 2, with a header 100) and a packet payload portion (see FIG. 2, and Information 101); see col. 7, line 31-50), wherein forming the forming the command packet includes

inserting a command flag in the packet header portion (see FIG. 2, Protocol field 100 in the header) that indicates a type of payload contained in the packet payload portion (see col. 7, line 31-41; protocol filed identifies the datagram encapsulated in the information/payload);

(d) inserting the packet into an HDLC frame (see FIG. 3, HDLC frame, where PPP packet is encapsulated/inserted into; see col. 7, line 50-54, 62 to col. 8, line 20); and

(e) transmitting the HDLC frame (see FIG. 11, transmitting PPP over HDLC frame via backbone tunnels 412) to a gateway (see FIG. 11, to edge Device 406) using a time division

multiplexed (TDM) channel (see FIG. 11, using backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "a high-level datalink control (HDLC) protocol, (c) inserting the control command into a command packet; a packet header portion and a packet payload portion, and a command flag in the packet header portion that indicates a type of payload contained in the packet payload portion, and (d) inserting the command packet into an HDLC frame (e) the HDLC frame", as taught by Araujo in the system of Graf, so that it would provide a simple technique for encapsulating data from variety of protocols; see Araujo col. 5, line 23-27.

Neither Graf nor Araujo explicitly disclose "an IP packet" and "IP packet in the payload portion and inserting a destination interface identifier for the IP packet in the packet header portion".

Masuda discloses a gateway/edge router node (see FIG. 5, Edge router 12) inserting data into an IP packet (see FIG. 5, inserting/encapsulation user data into IP packet; see col. 7, line 50 - 67); and

Wherein inserting the data into packet includes inserting data into the IP packet in the packet payload portion (see FIG. 5, inserting/encapsulation IP packet into packet payload portion 401) and inserting a destination interface for the IP packet in the packet header portion (see FIG. 5, 6, inserting/encapsulating destination router address/interface 407 in the packet header 403; see col. 7, line 50 to col. 8, line 14, 31-45).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "an IP packet" and "IP packet in the payload portion and

inserting a destination interface identifier for the IP packet in the packet header portion", as taught by Masuda, in the combined system of Graf and Araujo, so that it would provide simplifying a routing operation within a network and efficient mutual connections; see Masuda see col. 3, line 5-35.

Regarding Claim 7, Graf discloses a method for transmitting a media gateway control command (see FIG. 3, control command; see col. 8, line 6-15; see col. 9, line 27-40) from a media gateway controller (see FIG. 3, MGC_B (Media Gateway Controller)) to a remote media gateway (see FIG. 3, MG_4 (Media Gateway 4)) using a protocol (see FIG. 3, STM (Synchronous Transfer Mode) protocol see col. 9, line 25-29), the method comprising:

(a) generating the media gateway control command (see FIG. 3, sending/generating control command (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9, line 27-65);

(b) the media gateway control command (see FIG. 3, control command (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9, line 27-65);

(c) forming the command packet (see FIG. 3, forming/generating control command packet/frame (i.e. MEGACO or H.248 command); see col. 2, line 1-4; see col. 9, line 27-65);

(e) transmitting the frame to a media gateway (see FIG. 3, MG_3 transmits STM frame to MG_4) using a time division multiplexed (TDM) channel (see FIG. 3, using a TDM channel which embedded/carried within STM (Synchronous Transfer Mode) network (e.g. ISDN, T1, E1, SDH, SONET); see col. 9, line 25-29).

Graf does not explicitly disclose "a high-level datalink control (HDLC) protocol, (c) inserting the control command into a command packet; a packet header portion and a packet

payload portion, and a command flag in the packet header portion that indicates a type of payload contained in the packet payload portion, and (d) inserting the command packet into an HDLC frame (e) the HDLC frame".

However, Araujo teaches

(b) inserting a control command (see FIG. 2, adding/encapsulating/inserting Information 101 (i.e. IP packet with command/signaling/header information)) into a packet (see FIG. 2, into a PPP packet which contains command/signaling/header information; see col. 7, line 31-50);

(c) inserting a control command (see FIG. 2, adding/encapsulating/inserting Information 101 (i.e. IP packet with command/signaling/header information)) into a command packet (see FIG. 2, into a PPP packet which contains command/signaling/header information; see col. 7, line 31-50), wherein inserting the control common into the command packet includes

forming the forming the command packet (see FIG. 2, forming/creating PPP packet) having a packet header portion (see FIG. 2, with a header 100) and a packet payload portion (see FIG. 2, and Information 101); see col. 7, line 31-50), wherein forming the forming the command packet includes

inserting a command flag in the packet header portion (see FIG. 2, Protocol field 100 in the header) that indicates a type of payload contained in the packet payload portion (see col. 7, line 31-41; protocol filed identifies the datagram encapsulated in the information/payload);

(d) inserting the packet into an HDLC frame (see FIG. 3, HDLC frame, where PPP packet is encapsulated/inserted into; see col. 7, line 50-54, 62 to col. 8, line 20); and

(e) transmitting the HDLC frame (see FIG. 11, transmitting PPP over HDLC frame via backbone tunnels 412) to a gateway (see FIG. 11, to edge Device 406) using a time division

multiplexed (TDM) channel (see FIG. 11, using backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "a high-level datalink control (HDLC) protocol, (c) inserting the control command into a command packet; a packet header portion and a packet payload portion, and a command flag in the packet header portion that indicates a type of payload contained in the packet payload portion, and (d) inserting the command packet into an HDLC frame (e) the HDLC frame", as taught by Araujo in the system of Graf, so that it would provide a simple technique for encapsulating data from variety of protocols; see Araujo col. 5, line 23-27.

Neither Graf nor Araujo explicitly disclose "inserting packet in the payload portion and inserting an identifier in the packet header portion for identifying the data".

Masuda discloses a gateway/edge router node (see FIG. 5, Edge router 12) inserting the data into packet includes inserting data in the packet payload portion (see FIG. 5, inserting/encapsulation IP packet into packet payload portion 401) and inserting a identifier in the packet header portion for identifying the data (see FIG. 5, 6, inserting/encapsulating destination router address/identifier 407 or flow label/identifier 405 in the packet header 403; see col. 7, line 50 to col. 8, line 14, 31-45).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "inserting packet in the payload portion and inserting an identifier in the packet header portion for identifying the data" as taught by Masuda, in the combined system of Graf and Araujo, so that it would provide simplifying a routing operation within a network and efficient mutual connections; see Masuda see col. 3, line 5-35.

8. Claims 10 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oran (US006275574B1) in view of Araujo (US006097720A), and further in view of Olshansky (US005418785A).

Regarding Claim 10, Oran discloses a media gateway (see FIG. 2A, 3, gateway 18 that telephone/voice and data/IP packets/stream; see col. 3, line 15-25) comprising:

(a) a plurality of network interfaces (see FIG. 1, 3, telephone interface 36 and IP interface 38) for sending and receiving media streams to and from external networks (see FIG. 1, 3, for transmitting and receiving telephone/voice and data data/IP packets/stream to and from PSTN 16 and IP network 22; see col. 3, line 5-39; see col. 4, line 10-20);

(b) a plurality of voice processing resources operatively associated with the network interfaces (see FIG. 3, voice processing means to process voice by utilizing dial string 50, 52 for session application associated/related with telephone interface 36 and IP interface 38) for processing the media streams received from the external networks (see FIG. 1, 3, that process the telephone/voice and data/IP packets/stream received from PSTN 16 an IP network 22); see col. 3, line 5-39; see col. 4, line 10-20);

(c) a command interface (see FIG. 3, an signaling message 48 interface) for receiving commands from a media gateway controller (see FIG. 1, 3, that received signaling/commands/control messages (e.g. H.323, Q.931, or SIP messages) from gatekeeper 26; see col. 3, line 4-20; see col. 5, line 5-15; see col. 6, line 14-20; see col. 10, line 10-20);

(d) a controller (see FIG. 3, a combined control/management system of dial plan mapper 20 and DPM configuration information 32) operatively associated with the network interface and

the voice processing resources (see col. 4, line 10-42; associated with /related telephone interface 36 and IP interface 38 and voice processing means of dial strings 50, 52 of telephone interface 36 and IP interface 38) for controlling the network interfaces and the voice processing resources (see FIG. 3, for mapping/configuration the telephone interface 36 and IP interface 38 and voice processing means of dial strings 50, 52 of telephone interface 36 and IP interface 38; see col. 3, line 24-40; see col. 4, line 10-42), the controller being operatively associated with the command interface (see FIG. 3, the combined control/management system 20,32 associates/relates with a signaling message 48 interface) and that determine commands intended for the media gateway (see FIG. 1, 3, determines signaling message 48 for gateway 18) and commands intended for a remote media gateway (see FIG. 1, 3, signaling message for a remote gateway 28); see col. 3, line 5-21; see col. 4, line 10 to col. 5, line 25); and

(e) an interface (see FIG. 3, IP interface 38) operatively associated with the controller (see FIG. 3, associated/related to the combined control/management system 20,32) for transmitting media gateway control commands intended for the remote media gateway in command packets (see FIG. 1, 3, transmitting signaling message (e.g. H.323, Q.931, or SIP messages)), and for forwarding to the remote media gateway via a channel (see FIG. 1, 3, sending/forwarding the signaling message to a remote gateway 28 via a channel/connection; see col. 3, line 1-39; see col. 4, line 10 to col. 5, line 15, 30 to col. 6, line 17).

Oran does not explicitly disclose “high-level data link control (HDLC)”, " time division multiplexed (TDM)”, “encapsulating the command packets in HDLC frames”, and “via a time division multiplexed (TDM) channel”.

However, Araujo teaches a media gateway (see FIG. 11, Edge Device 405; see FIG. 9, access Mux 102) comprising:

(d) a controller (see FIG. 1, Layer 2 access Mux 20 with management/controlling functionality) determines the control commands indented to the local media gateway or control commands indented to the remote media gateway (by utilizing packet header see FIG. 2, header 100) (see FIG. 9,11, edge device 405 determines signaling channel frame send to edge device 405 or edge device 406 or RAS 408; see col. 6, line 15-65; see col. 7, line 30-54, 62; col. 12, line 35-65);

(e) a high-level data link control (HDLC) interface (see FIG. 9, a combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames) associated with the controller (see FIG. 1, 9, associated/related with access Mux 102; see col. 9, line 60 to col. 10, line 20) for encapsulating media gateway control commands (see FIG. 2-3, PPP packet with command/signaling/header information is encapsulated into HDLC) intended for a remote media gateway (see FIG. 9,11, for remote Edge device 406 or RAS 408) in HDLC frames (see FIG. 3, HDLC frame; see col. 7, line 50-54, 62 to col. 8, line 20); and for forwarding the HDLC frams to the remote media gateway via the HDLC interface (see FIG. 9, 11, transmits/forwards signaling channel frame to Edge device 406 or RAS 408 via the combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames; see col. 7, line 50-54, 62 to col. 8, line 20; see col. 9, line 60 to col. 10, line 20) via a time division multiplexed (TDM) channel (see FIG. 11, backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide “high-level data link control (HDLC)”, " time division multiplexed (TDM)”, “encapsulating the command packets in HDLC frames”, and “via a time division multiplexed (TDM) channel”, as taught by Araujo in the system of Oran, so that it would provide a simple technique for encapsulating data from variety of protocols; see Araujo col. 5, line 23-27.

Neither Oran nor Araujo explicitly disclose “differentiates between”.

However, utilizing address in the header of the signaling frame is so well known in the art. In particular, Olshansky further discloses wherein the local node (see FIG. 2-3, receiving regular node 120/300) comprising a controller (see FIG. 3, a combined system of Node Manager 340, bridge 370 and control processor 330) operatively with the interfaces for controlling the interfaces (see FIG. 3, controls/manages receiver 305 and transmitter ports 355; see col. 6, line 10-55) and that differentiate between commands intended for the local node and commands intended to a remote node (see FIG. 1-3, differentiate/determine tokens are addressed to the regular node 120 (per FIG. 120) and next regular node 130; note that each node receives, process and retransmits the control channel token, and the regular node differentiate whether the token is addressed to it or other node by means of destination address (see FIG. 2); see col. 4, line 40-60; see col. 5, line 26-60; see col. 6, line 10 to col. 7, line 35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide differentiates between”, as taught by Olshansky , in the combined system of Oran and Araujo, so that it would provide high throughput communication system; see Olshansky col. 1, line 57 to col. 2, line 36.

Regarding Claim 14, Oran discloses wherein the interface (see FIG. 3, IP interface 38) sends call control commands intended for the remote media gateway in the command packets (see FIG. 1, 3, transmitting call/connection control (e.g. H.323, Q.931, or SIP) commands for a remote gateway 28 in the signaling frame/packet), and forward the frames to the remote media gateway via the channel (see FIG. 1, 3, sending/forwarding the call/connection control frames to a remote gateway 28 via a channel/connection; see col. 3, line 1-39; see col. 4, line 10 to col. 5, line 15, 30 to col. 6, line 17).

Oran does not explicitly disclose "high-level data link control (HDLC), encapsulating the command packets in HDLC frames, and "via a time division multiplexed (TDM) channel".

However, Araujo teaches a media gateway (see FIG. 11, Edge Device 405; see FIG. 9, access Mux 102) wherein the HDLC interface see FIG. 9, a combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames) encapsulate the command packets in HDLC frames (see FIG. 2-3, PPP packet with command/signaling/header information is encapsulated into HDLC), and forward the HDLC frames to the remote media gateway (see FIG. 9, 11, transmits/forwards HDLC frames to Edge device 406 or RAS 408 ; see col. 7, line 50-54, 62 to col. 8, line 20; see col. 9, line 60 to col. 10, line 20) via the TDM channel (see FIG. 11, backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "high-level data link control (HDLC), encapsulating the command packets in HDLC frames, and "via a time division multiplexed (TDM) channel", as

taught by Araujo in the system of Oran, so that it would provide a simple technique for encapsulating data from variety of protocols; see Araujo col. 5, line 23-27.

Regarding Claim 15, Oran discloses wherein the interface (see FIG. 3, IP interface 38) sends media gateway maintenance commands intended for the remote media gateway in the command packets (see FIG. 1, 3, transmitting maintenance/configuration (e.g. H.323, Q.931, or SIP) commands for a remote gateway 28 in the signaling frame/packet), and forward the frames to the remote media gateway via the channel (see FIG. 1, 3, sending/forwarding the maintenance/configuration frames to a remote gateway 28 via a channel/connection; see col. 3, line 1-39; see col. 4, line 10 to col. 5, line 15, 30 to col. 6, line 17).

Oran does not explicitly disclose "high-level data link control (HDLC), encapsulating the command packets in HDLC frames, and "via a time division multiplexed (TDM) channel".

However, Araujo teaches a media gateway (see FIG. 11, Edge Device 405; see FIG. 9, access Mux 102) wherein the HDLC interface see FIG. 9, a combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames) encapsulate the command packets in HDLC frames (see FIG. 2-3, PPP packet with command/signaling/header information is encapsulated into HDLC), and forward the HDLC frames to the remote media gateway (see FIG. 9, 11, transmits/forwards HDLC frames to Edge device 406 or RAS 408 ; see col. 7, line 50-54, 62 to col. 8, line 20; see col. 9, line 60 to col. 10, line 20) via the TDM channel (see FIG. 11, backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "high-level data link control (HDLC), encapsulating the

command packets in HDLC frames, and "via a time division multiplexed (TDM) channel", as taught by Araujo in the system of Oran, so that it would provide a simple technique for encapsulating data from variety of protocols; see Araujo col. 5, line 23-27.

Regarding Claim 16, Oran discloses wherein the interface (see FIG. 3, IP interface 38) sends network management messages intended for the remote media gateway in the command packets (see FIG. 1, 3, transmitting network management/control (e.g. H.323, Q.931, or SIP) message/data for a remote gateway 28 in the signaling frame/packet), and forward the frames to the remote media gateway via the channel (see FIG. 1, 3, sending/forwarding the network management/control message/data to a remote gateway 28 via a channel/connection; see col. 3, line 1-39; see col. 4, line 10 to col. 5, line 15, 30 to col. 6, line 17).

Oran does not explicitly disclose "high-level data link control (HDLC), encapsulating the command packets in HDLC frames, and "via a time division multiplexed (TDM) channel".

However, Araujo teaches a media gateway (see FIG. 11, Edge Device 405; see FIG. 9, access Mux 102) wherein the HDLC interface see FIG. 9, a combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames) encapsulate the command packets in HDLC frames (see FIG. 2-3, PPP packet with command/signaling/header information is encapsulated into HDLC), and forward the HDLC frames to the remote media gateway (see FIG. 9, 11, transmits/forwards HDLC frames to Edge device 406 or RAS 408 ; see col. 7, line 50-54, 62 to col. 8, line 20; see col. 9, line 60 to col. 10, line 20) via the TDM channel (see FIG. 11, backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "high-level data link control (HDLC), encapsulating the command packets in HDLC frames, and "via a time division multiplexed (TDM) channel", as taught by Araujo in the system of Oran, so that it would provide a simple technique for encapsulating data from variety of protocols; see Araujo col. 5, line 23-27.

9. Claim 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oran in view of Araujo, and Olshansky further in view of Takeguchi (US 20030043734A1).

Regarding Claim 11, Oran discloses a plurality of network interfaces for sending and receiving data over networks as set forth above in claim 10.

Araujo further discloses a of TDM network interface (see FIG. 9, Tunnel Port 108 of Access Mux 102 which has TDM capability; see FIG. 11, Tunnel 412 port of Edge Device 405) for sending and receiving data over TDM channel (see FIG. 11, sending and receiving data backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66) and wherein the HDLC interface (see FIG. 9, a combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames) sends the HDLC frames to the TDM network interface (see FIG. 9, sends HDLC frames to Tunnel Port 108 of Access Mux 102 which has TDM capability; see FIG. 11, Tunnel 412 port of Edge Device 405) and the TDM network interface send the HDLC frames (see FIG. 9, Tunnel Port 108 of Access Mux 102 which has TDM capability; see FIG. 11, Tunnel 412 port of Edge Device 405 sends HDLC frames) to the remote media gateway (see FIG. 9,11, to Edge device 406 or RAS 408) via the TDM channel

(see FIG. 11, backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66).

Neither Oran, Araujo nor Takeguchi explicitly disclose “a plurality” (of TDM interfaces), and (TDM) “channels”.

However, it is well known in the art that gateway/edge node has more than on TDM interfaces and associated TDM channels, and if one have one interface and channel, it would be obvious to have plurality of interfaces and channels so that more than more user can be connected. In particular, Takeguchi further discloses wherein the plurality of network interfaces include a plurality of TDM network interfaces (see FIG. 1, working unit 21 W and protection unit 21P interfaces/port which are connected to SDH/TDM transmission equipment 2) for sending and receiving data over TDM channels (see FIG. 1, for sending and receiving data over working channel/line 4A and protection channel/line 4B which are connected to SDH/TDM transmission equipment 2) and the TDM network interfaces sends the frames to the remote gateway via the TDM channels (see FIG. 1, working unit 21 W and protection unit 21P interfaces/port of SDH/TDM transmission equipment 2 transmit SONET/TDM frames to remote SDH/TDM transmission equipment 3 via working channel/line 4A and protection channel/line 4B; see page 5, paragraph 72-76).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide “a plurality” (of TDM interfaces), and (TDM) “channels”, as taught by Takeguchi, in the combined system of Oran, Araujo and Olshansky, so that it would provide performing a transmission processing of the transmission frame through protection line in lieu of the working line when a fault occurs; see Takeguchi see page 5, paragraph 73.

Regarding Claim 12, the combined system of Oran, Araujo, and Olshansky discloses the controller sends the HDLC frames to the remote gateway in one of the TDM channels as set forth in the claims above.

Neither Oran, Araujo nor Takeguchi explicitly disclose "TDM network interfaces provide redundant access to the TDM channels" and "dynamically switches between TDM channels in response to failure of one of the TDM channels".

Takeguchi further discloses wherein the TDM network interfaces provide redundant access (see FIG. 1, working unit 21 W and protection unit 21P interfaces/ports are connected to SDH/TDM transmission equipment 2 provide redundancy) to the TDM channels (see FIG. 1, to the SDH/TDM working channel/line 4A and protection channel/line 4B) and wherein the controller (see FIG. 1, APS control firmware master 22) dynamically switches between TDM channels (see FIG. 1, dynamically/actively switches from working channel/line 4A to protection channel/line 4B) for sending the frames to the remote gateway (see FIG. 1, for sending SONET/TDM data frames to remote SDH/TDM transmission equipment 3) in response to failure of one of the TDM channels (see FIG. 1, upon detecting a fault in working line/channel 4A; see page 5, paragraph 72-78.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "TDM network interfaces provide redundant access to the TDM channels and dynamically switches between TDM channels in response to failure of one of the TDM channels", as taught by Takeguchi, in the combined system of Oran, Araujo and Olshansky, so that it would provide performing a transmission processing of the transmission

frame through protection line in lieu of the working line when a fault occurs; see Takeguchi see page 5, paragraph 73.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oran in view of Araujo, and Olshansky further in view of Abel (US 2002/0015481).

Regarding Claim 13, of Oran discloses wherein the plurality of network interfaces (see FIG. 1, 3, telephone interface 36 and IP interface 38) include a packet network interface (see FIG. 1, 3, IP interface 38) for sending and receiving packetized media streams to and from external networks (see FIG. 1, 3, for transmitting and receiving pocketized telephone/voice and data data/IP packets/stream to and from PSTN 16 and IP network 22; see col. 3, line 5-39; see col. 4, line 10-20).

Neither Oran, Araujo nor Takeguchi explicitly disclose “a plurality” (of packet network interfaces).

However, it is well known in the art that gateway/edge node has more than on packet network interfaces, it would be obvious to have plurality of interfaces so that more than more users can be connected. In particular, Able further discloses a gateway (see FIG. 1, Gateway UE-A) comprises wherein the plurality of network interfaces include a plurality of packet network interfaces (see FIG. 1, **n** virtual user data/packet interfaces/port for n virtual user data gateway ND-Gn) for sending and receiving packetized media streams (see FIG. 1, transmitting and receiving packetized voice/data) to and from external networks (see FIG. 1, to and from external network IP-KN); see page 1-2, paragraph 16-18, 21-23.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "a plurality", as taught by Able, in the combined system of Oran, Araujo and Olshansky, so that it would provide network resources needed for the signaling can be kept low by using common signaling; see Able see page 1, paragraph 8-12.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oran in view of Araujo, and Olshansky further in view of Elliott (US006614781B1).

Regarding Claim 17, Oran discloses the interface as set forth in claim above.

Oran does not explicitly disclose "the HDLC interface insert a header in the command packet indicating whether a payload of the packet carries any specific type of message".

However, Araujo disclose the HDLC interface (see FIG. 9, a combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames) insert a header (see FIG. 2, a header (e.g. Protocol field 100)) in the command packet indicating whether a payload of the packet (see FIG. 2, payload information 101) carries any specific type of message (see col. 7, line 31-41; protocol filed identifies the message encapsulated in the information/payload).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "the HDLC interface insert a header in the command packet indicating whether a payload of the packet carries any specific type of message", as taught by Araujo in the system of Graf, so that it would provide a simple technique for encapsulating data from variety of protocols; see Araujo col. 5, line 23-27.

Neither Oran, Araujo nor Olshansky explicitly disclose "a network management message, a call control message, or a media gateway maintenance message".

However, Elliott further discloses a payload of the command packet carries (see col. 19, line 1-28; see col. 25, line 15-45; see col. 140, line 14-35; see col. 142, line 30 to col. 144, line 30; information/payload of the control/command packet/message contain) a network management message (see col. 144, line 30 to col. 150, line 60; Tables 145-149, network startup messages, system configuration messages, <u>or</u> switch configuration messages), a call control message (see col. 156, line 46 to col. 161, line 40; table 158A, call control message), <u>or</u> a media gateway maintenance message (see col. 150, line 60 to col. 152, line 60; table 150-A-B, media gateway maintenance status messages).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "a network management message, a call control message, or a media gateway maintenance message", as taught by Elliott, in the combined system of Oran, Araujo and Olshansky, so that it would provide communicating both voice and data over a network that is adapted to coexist and communicate with a PSTN; see Elliott see col. 4, line 24-65.

12. Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US006671367B1) in view of Araujo (US006097720A).

Regarding Claim 20, Graf discloses a system (see FIG. 3, a telecommunication network) for managing a remote media gateway (see FIG. 3, MG_4 (Media Gateway 4)), the system comprising:

(a) a media gateway controller (see FIG. 3, MGC_B (Media Gateway Controller)) for generating media gateway control commands (see FIG. 3, control command, (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9, line 27-65);

(b) a local media gateway (see FIG. 3, MG_3 (Media Gateway 3)) operatively associated with the media gateway controller (see FIG. 3, MG_3 associated with MGC_B) for sending and receiving media streams to and from external networks (see FIG. 3, MG_3 couples to external network to transport (i.e. transmitting and receiving) user plane data; see col. 8, line 10-36; see col. 10, line 1-26);

(c) an interface (see FIG. 3, an interface that couples between MGC_B and STM interface of MG_3) operatively associated with at least one of the media gateway and the media gateway controller (see FIG. 3, the interface relates/associates with MG_3 and MGC_B) for transmitting media gateway control commands (see FIG. 3, transmitting control command (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9, line 27-65) intended for a remote media gateway (see FIG. 3, to MG_4) in frames (see FIG. 3, MG_3 transmits STM frame to MG_4; see col. 9, line 25-29); and

(d) at least one time division multiplexed (TDM) interface (see FIG. 3, TDM interface which is embedded/part of STM interface of MG_3) operatively associated with the interface for sending the media gateway control commands (see FIG. 3, STM interface associates/relates with the interface for sending control command (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3)) to the remote media gateway (see FIG. 3, to MG_4) via a TDM channel (see FIG. 3, using TDM channel which embedded/carried within STM (Synchronous Transfer Mode) network (e.g. ISDN, T1, E1, SDH, SONET); see col. 9, line 25-29),

wherein the local media gateway generates network management message (see FIG. 3, MG_3 generates/creates initiation/setup signaling message by incorporating MEGACO or H.248 command; see col. 8, line 24-46; see col. 9, line 30-60) intended for the remote media gateway

(see FIG. 3, for MG_4) and forward the network management messages to the remote media gateway via the interface (see FIG. 3, transmits/forwards initiation/setup signaling message (i.e. a frame/message with MEGACO/H.248) to MG_4 via the interface that couples between MGC_B and STM interface of MG_3; see col. 2, line 1-4; see col. 8, line 24-46; see col. 9, line 27-65).

Graf does not explicitly disclose "(c) a high-level data link control (HDLC) interface for encapsulating data intended for a remote media gateway in HDLC frames; (d) associated with the HDLC interface, and via the HDLC interface".

However, Araujo teaches

(b) a local gateway (see FIG. 11, Edge Device 405; see FIG. 9, access Mux 102) for sending and receiving media streams (see col. 5, line 55-60; transmitting and receiving data traffic) to and from external networks (see FIG. 11, to and from a network of CPEs (400-404)); see col. 9, line 60 to col. 10, line 20; see col. 12, line 35-44);

(c) a high-level data link control (HDLC) interface (see FIG. 9, a combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames) operatively associated with at least one of the gateway (see FIG. 11, Edge device 405; see FIG. 9, access Mux 102; see col. 9, line 60 to col. 10, line 20) for encapsulating control commands (see FIG. 2-3, PPP packet with command/signaling/header information is encapsulated into HDLC) intended for a remote gateway (see FIG. 9,11, Edge device 406 or RAS 408) in HDLC frames (see FIG. 3, HDLC frame; see col. 7, line 50-54, 62 to col. 8, line 20); and

(d) at least one time division multiplexed (TDM) interface (see FIG. 9, Tunnel Port 108 of Access Mux 102 which has TDM capability; see FIG. 11, Tunnel 412 port of Edge Device

405) operatively associated with the HDLC interface for sending the control commands (see FIG. 3, Tunnel port associates/relates with the combined interface of ports for sending command/signaling/header information) to the remote gateway (see FIG. 9,11, Edge device 406 or RAS 408) via a TDM channel (see FIG. 11, backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66);

wherein the local media gateway generates network management message (see FIG. 11, Edge Device 405; see FIG. 9, access Mux 102 generates/creates signaling channel frame; see col. 6, line 19-34,40-45,56-65) intended for the remote media gateway (see FIG. 9,11, Edge device 406 or RAS 408) and forward the network management messages to the remote media gateway via the HDLC interface (see FIG. 9, 11, transmits/forwards signaling channel frame to Edge device 406 or RAS 408 via the combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames; see col. 7, line 50-54, 62 to col. 8, line 20; see col. 9, line 60 to col. 10, line 20).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "(c) a high-level data link control (HDLC) interface for encapsulating data intended for a remote media gateway in HDLC frames; (d) associated with the HDLC interface and via HDLC interface", as taught by Araujo in the system of Graf, so that it would provide a simple technique for encapsulating data from variety of protocols; see Araujo col. 5, line 23-27.

Regarding Claim 21, Graf discloses a system (see FIG. 3, a telecommunication network) for managing a remote media gateway (see FIG. 3, MG_4 (Media Gateway 4)), the system comprising:

(a) a media gateway controller (see FIG. 3, MGC_B (Media Gateway Controller)) for generating media gateway control commands (see FIG. 3, control command, (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9, line 27-65);

(b) a local media gateway (see FIG. 3, MG_3 (Media Gateway 3)) operatively associated with the media gateway controller (see FIG. 3, MG_3 associated with MGC_B) for sending and receiving media streams to and from external networks (see FIG. 3, MG_3 couples to external network to transport (i.e. transmitting and receiving) user plane data; see col. 8, line 10-36; see col. 10, line 1-26);

(c) an interface (see FIG. 3, an interface that couples between MGC_B and STM interface of MG_3) operatively associated with at least one of the media gateway and the media gateway controller (see FIG. 3, the interface relates/associates with MG_3 and MGC_B) for transmitting media gateway control commands (see FIG. 3, transmitting control command (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9, line 27-65) intended for a remote media gateway (see FIG. 3, to MG_4) in frames (see FIG. 3, MG_3 transmits STM frame to MG_4; see col. 9, line 25-29); and

(d) at least one time division multiplexed (TDM) interface (see FIG. 3, TDM interface which is embedded/part of STM interface of MG_3) operatively associated with the interface for sending the media gateway control commands (see FIG. 3, STM interface associates/relates with the interface for sending control command (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3)) to the remote media gateway (see FIG. 3, to MG_4) via a TDM channel (see FIG. 3, using TDM channel which embedded/carried within STM (Synchronous Transfer Mode) network (e.g. ISDN, T1, E1, SDH, SONET); see col. 9, line 25-29).;

wherein the media gateway controller generates media gateway maintenance commands (see FIG. 3, MGC_B generates/creates initiation/setup signaling message by incorporating MEGACO or H.248 commands; see col. 8, line 24-46; see col. 9, line 30-60) intended for the remote gateway (see FIG. 3, for MG_4) and forward the media gateway maintenance commands to the remote media gateway via the interface (see FIG. 3, transmits/forwards initiation/setup signaling message (i.e. a frame/message with MEGACO/H.248) to MG_4 via the interface that couples between MGC_B and STM interface of MG_3; see col. 2, line 1-4; see col. 8, line 24-46; see col. 9, line 27-65).

Graf does not explicitly disclose (c) a high-level data link control (HDLC) interface for encapsulating data intended for a remote media gateway in HDLC frames; (d) associated with the HDLC interface.

However, Araujo teaches

(b) a local gateway (see FIG. 11, Edge Device 405; see FIG. 9, access Mux 102) for sending and receiving media streams (see col. 5, line 55-60; transmitting and receiving data traffic) to and from external networks (see FIG. 11, to and from a network of CPEs (400-404)); see col. 9, line 60 to col. 10, line 20; see col. 12, line 35-44);

(c) a high-level data link control (HDLC) interface (see FIG. 9, a combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames) operatively associated with at least one of the gateway (see FIG. 11, Edge device 405; see FIG. 9, access Mux 102; see col. 9, line 60 to col. 10, line 20) for encapsulating control commands (see FIG. 2-3, PPP packet with command/signaling/header information is encapsulated into HDLC) intended for a remote

gateway (see FIG. 9,11, Edge device 406 or RAS 408) in HDLC frames (see FIG. 3, HDLC frame; see col. 7, line 50-54, 62 to col. 8, line 20); and

(d) at least one time division multiplexed (TDM) interface (see FIG. 9, Tunnel Port 108 of Access Mux 102 which has TDM capability; see FIG. 11, Tunnel 412 port of Edge Device 405) operatively associated with the HDLC interface for sending the control commands (see FIG. 3, Tunnel port associates/relates with the combined interface of ports for sending command/signaling/header information) to the remote gateway (see FIG. 9,11, Edge device 406 or RAS 408) via a TDM channel (see FIG. 11, backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66).

forwarding the network management messages to the remote media gateway via the HDLC interface (see FIG. 9, 11, transmits/forwards signaling channel frame to Edge device 406 or RAS 408 via the combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames; see col. 7, line 50-54, 62 to col. 8, line 20; see col. 9, line 60 to col. 10, line 20).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "(c) a high-level data link control (HDLC) interface for encapsulating data intended for a remote media gateway in HDLC frames; (d) associated with the HDLC interface and via HDLC interface", as taught by Araujo in the system of Graf, so that it would provide a simple technique for encapsulating data from variety of protocols; see Araujo col. 5, line 23-27.

13. Claims 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graf in view of Araujo, and further in view of Takeguchi (US 20030043734A1).

Regarding Claim 26, Graf discloses a system (see FIG. 3, a telecommunication network) for managing a remote media gateway (see FIG. 3, MG_4 (Media Gateway 4)), the system comprising:

(a) a media gateway controller (see FIG. 3, MGC_B (Media Gateway Controller)) for generating media gateway control commands (see FIG. 3, control command, (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9, line 27-65);

(b) a local media gateway (see FIG. 3, MG_3 (Media Gateway 3)) operatively associated with the media gateway controller (see FIG. 3, MG_3 associated with MGC_B) for sending and receiving media streams to and from external networks (see FIG. 3, MG_3 couples to external network to transport (i.e. transmitting and receiving) user plane data; see col. 8, line 10-36; see col. 10, line 1-26);

(c) an interface (see FIG. 3, an interface that couples between MGC_B and STM interface of MG_3) operatively associated with at least one of the media gateway and the media gateway controller (see FIG. 3, the interface relates/associates with MG_3 and MGC_B) for transmitting media gateway control commands (see FIG. 3, transmitting control command (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9, line 27-65) intended for a remote media gateway (see FIG. 3, to MG_4) in frames (see FIG. 3, MG_3 transmits STM frame to MG_4; see col. 9, line 25-29); and

(d) at least one time division multiplexed (TDM) interface (see FIG. 3, TDM interface which is embedded/part of STM interface of MG_3) operatively associated with the interface for sending the media gateway control commands (see FIG. 3, STM interface associates/relates with the interface for sending control command (i.e. MEGACO or H.248 command) via X_CP

interface (i.e. X_CP_3)) to the remote media gateway (see FIG. 3, to MG_4) via a TDM channel (see FIG. 3, using TDM channel which embedded/carried within STM (Synchronous Transfer Mode) network (e.g. ISDN, T1, E1, SDH, SONET); see col. 9, line 25-29).;

wherein the media gateway controller generates media gateway maintenance commands (see FIG. 3, MG_3 generates/creates initiation/setup signaling message by incorporating MEGACO or H.248 commands; see col. 8, line 24-46; see col. 9, line 30-60) intended for the remote gateway (see FIG. 3, for MG_4) and forward the media gateway maintenance commands to the remote media gateway via the interface (see FIG. 3, transmits/forwards initiation/setup signaling message (i.e. a frame/message with MEGACO/H.248) to MG_4 via the interface that couples between MGC_B and STM interface of MG_3; see col. 2, line 1-4; see col. 8, line 24-46; see col. 9, line 27-65);

wherein the interface is connected to the media gateway controller (see FIG. 3, an interface that couples between MGC_B and STM interface of MG_3 is connected to the MGC_B) and wherein the media gateway controller switches frame from the interface (see FIG. 3, MGC_B switches frames from interface that couples between MGC_B and STM interface of MG_3; see col. 2, line 1-4; see col. 9, line 27-65).

Graf does not explicitly disclose "(c) a high-level data link control (HDLC) interface for encapsulating data intended for a remote media gateway in HDLC frames; (d) associated with the HDLC interface".

However, Araujo teaches

(b) a local gateway (see FIG. 11, Edge Device 405; see FIG. 9, access Mux 102) for sending and receiving media streams (see col. 5, line 55-60; transmitting and receiving data

traffic) to and from external networks (see FIG. 11, to and from a network of CPEs (400-404)); see col. 9, line 60 to col. 10, line 20; see col. 12, line 35-44);

(c) a high-level data link control (HDLC) interface (see FIG. 9, a combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames) operatively associated with at least one of the gateway (see FIG. 11, Edge device 405; see FIG. 9, access Mux 102; see col. 9, line 60 to col. 10, line 20) for encapsulating control commands (see FIG. 2-3, PPP packet with command/signaling/header information is encapsulated into HDLC) intended for a remote gateway (see FIG. 9,11, Edge device 406 or RAS 408) in HDLC frames (see FIG. 3, HDLC frame; see col. 7, line 50-54, 62 to col. 8, line 20); and

(d) at least one time division multiplexed (TDM) interface (see FIG. 9, Tunnel Port 108 of Access Mux 102 which has TDM capability; see FIG. 11, Tunnel 412 port of Edge Device 405) operatively associated with the HDLC interface for sending the control commands (see FIG. 3, Tunnel port associates/relates with the combined interface of ports for sending command/signaling/header information) to the remote gateway (see FIG. 9,11, Edge device 406 or RAS 408) via a TDM channel (see FIG. 11, backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66).

forwarding the network management messages to the remote media gateway via the HDLC interface (see FIG. 9, 11, transmits/forwards signaling channel frame to Edge device 406 or RAS 408 via the combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames; see col. 7, line 50-54, 62 to col. 8, line 20; see col. 9, line 60 to col. 10, line 20).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "(c) a high-level data link control (HDLC) interface for

encapsulating data intended for a remote media gateway in HDLC frames; (d) associated with the HDLC interface and via HDLC interface", as taught by Araujo in the system of Graf, so that it would provide a simple technique for encapsulating data from variety of protocols; see Araujo col. 5, line 23-27.

The combined system of Graf and Araujo discloses wherein the TDM interface is connected to the media gateway controller and wherein the media gateway controller switches HDLC frames to TDM interface as set forth above.

Neither Graf nor Araujo explicitly disclose "a plurality of redundant TDM interfaces for redundantly connecting" and "detects failure of any one of the TDM interfaces and switches frames from the failed interface to any of the other TDM interfaces".

Takeguchi further discloses wherein the plurality of redundant TDM interfaces are connected to the node (see FIG. 1, working unit 21 W and protection unit 21P are connected to SDH/TDM transmission equipment 2) and wherein the node detects failure of any one of the TDM interfaces and switches frames from the failed interface to any of the other TDM interfaces (see FIG. 1, equipment 2 upon detecting a fault in working line and switching the transmission of frames to the protection line; see page 5, paragraph 72-76.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "a plurality of redundant TDM interfaces for redundantly connecting" and "detects failure of any one of the TDM interfaces and switches frames from the failed interface to any of the other TDM interfaces", as taught by Takeguchi, in the combined system of Graf and Araujo, so that it would provide performing a transmission processing of the

transmission frame through protection line in lieu of the working line when a fault occurs; see Takeguchi see page 5, paragraph 73.

14. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graf (US006671367B1) in view of Araujo (US006097720A) and Olshansky (US005418785A).

Regarding Claim 30, Graf discloses a system (see FIG. 3, a telecommunication network) for managing a remote media gateway (see FIG. 3, MG_4 (Media Gateway 4)), the system comprising:

(a) a media gateway controller (see FIG. 3, MGC_B (Media Gateway Controller)) for generating media gateway control commands (see FIG. 3, control command, (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9, line 27-65);

(b) a local media gateway (see FIG. 3, MG_3 (Media Gateway 3)) operatively associated with the media gateway controller (see FIG. 3, MG_3 associated with MGC_B) for sending and receiving media streams to and from external networks (see FIG. 3, MG_3 couples to external network to transport (i.e. transmitting and receiving) user plane data; see col. 8, line 10-36; see col. 10, line 1-26);

(c) an interface (see FIG. 3, an interface that couples between MGC_B and STM interface of MG_3) operatively associated with at least one of the media gateway and the media gateway controller (see FIG. 3, the interface relates/associates with MG_3 and MGC_B) for transmitting media gateway control commands (see FIG. 3, transmitting control command (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3); see col. 2, line 1-4; see col. 9,

line 27-65) intended for a remote media gateway (see FIG. 3, to MG_4) in frames (see FIG. 3, MG_3 transmits STM frame to MG_4; see col. 9, line 25-29); and

(d) at least one time division multiplexed (TDM) interface (see FIG. 3, TDM interface which is embedded/part of STM interface of MG_3) operatively associated with the interface for sending the media gateway control commands (see FIG. 3, STM interface associates/relates with the interface for sending control command (i.e. MEGACO or H.248 command) via X_CP interface (i.e. X_CP_3)) to the remote media gateway (see FIG. 3, to MG_4) via a TDM channel (see FIG. 3, using TDM channel which embedded/carried within STM (Synchronous Transfer Mode) network (e.g. ISDN, T1, E1, SDH, SONET); see col. 9, line 25-29);

wherein the media gateway controller sends the media gateway control commands to the local media gateway (see FIG. 3, MGC_B sends initiation/setup signaling message by incorporating MEGACO or H.248 commands to MG_3; see col. 8, line 24-46; see col. 9, line 30-60) and

wherein the local media gateway determines the control commands to the local media gateway or to the remote media gateway (see FIG. 3, MG_3 determines MEGACO or H.248 commands to the MG_3 or MG_4; ; see col. 2, line 1-4; see col. 8, line 24-46; see col. 9, line 27-65'; see col. 10, line 30-60).

Graf does not explicitly disclose "(c) a high-level data link control (HDLC) interface for encapsulating data intended for a remote media gateway in HDLC frames; (d) associated with the HDLC interface".

However, Araujo teaches

(b) a local gateway (see FIG. 11, Edge Device 405; see FIG. 9, access Mux 102) for sending and receiving media streams (see col. 5, line 55-60; transmitting and receiving data traffic) to and from external networks (see FIG. 11, to and from a network of CPEs (400-404)); see col. 9, line 60 to col. 10, line 20; see col. 12, line 35-44);

(c) a high-level data link control (HDLC) interface (see FIG. 9, a combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames) operatively associated with at least one of the gateway (see FIG. 11, Edge device 405; see FIG. 9, access Mux 102; see col. 9, line 60 to col. 10, line 20) for encapsulating control commands (see FIG. 2-3, PPP packet with command/signaling/header information is encapsulated into HDLC) intended for a remote gateway (see FIG. 9,11, Edge device 406 or RAS 408) in HDLC frames (see FIG. 3, HDLC frame; see col. 7, line 50-54, 62 to col. 8, line 20); and

(d) at least one time division multiplexed (TDM) interface (see FIG. 9, Tunnel Port 108 of Access Mux 102 which has TDM capability; see FIG. 11, Tunnel 412 port of Edge Device 405) operatively associated with the HDLC interface for sending the control commands (see FIG. 3, Tunnel port associates/relates with the combined interface of ports for sending command/signaling/header information) to the remote gateway (see FIG. 9,11, Edge device 406 or RAS 408) via a TDM channel (see FIG. 11, backbone TDM channels/tunnels 412 of Publish Switch Telephone Network (PSTN) 407: see col. 12, line 35-66).

forwarding the network management messages to the remote media gateway via the HDLC interface (see FIG. 9, 11, transmits/forwards signaling channel frame to Edge device 406 or RAS 408 via the combined interface of ports 103-105, bus 106, and CPU 107 that processes HDLC frames; see col. 7, line 50-54, 62 to col. 8, line 20; see col. 9, line 60 to col. 10, line 20);

wherein the local gateway determines the control commands send to the local gateway or to the remote media gateway (by utilizing packet header see FIG. 2, header 100) (see FIG. 9, 11, edge device 405 determines signaling channel frame send to edge device 405 or edge device 406 or RAS 408; see col. 6, line 15-65; see col. 7, line 30-54, 62; col. 12, line 35-65).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "(c) a high-level data link control (HDLC) interface for encapsulating data intended for a remote media gateway in HDLC frames; (d) associated with the HDLC interface and via HDLC interface", as taught by Araujo in the system of Graf, so that it would provide a simple technique for encapsulating data from variety of protocols; see Araujo col. 5, line 23-27.

Neither Graf nor Araujo explicitly disclose "addressed" to.

However, utilizing address in the header of the signaling frame is so well known in the art. In particular, Olshansky further discloses wherein control node (see FIG. 1, primary node 170/160) sends the control commands (see FIG. 2, control channel token) to the local node (see FIG. 2, receiving regular node 120; see col. 3, line 55 to col. 4, line 6; see col. 5, line 25-60; see col. 7, line 15-35)

wherein the local node (see FIG. 2-3, receiving regular node 120/300) determines the control commands are addressed to the local node or to the remote node (see FIG. 1-3, determines tokens are addressed to the regular node 120 (per FIG. 120) or next regular node 130; note that each node receives, process and retransmits the control channel token, and the regular node determines whether the token is addressed to it or other node by means of destination

address (see FIG. 2); see col. 4, line 40-60; see col. 5, line 26-60; see col. 6, line 10 to col. 7, line 35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide “addressed” to, as taught by Olshansky , in the combined system of Graf and Araujo, so that it would provide high throughput communication system; see Olshansky col. 1, line 57 to col. 2, line 36.

Regarding Claim 31, Graf discloses wherein the local media gateway process media gateway control commands that are send to the local media gateway (see FIG. 3, MG_3 process the MEGACO or H.248 commands send to MG_3; see col. 8, line 24-46; see col. 9, line 30-60) and forwards the media gateway control commands that are send to the remote media gateway (see FIG. 3, MG_3 sends MEGACO or H.248 commands to MG_4; see col. 2, line 1-4; see col. 8, line 24-46; see col. 9, line 27-65’; see col. 10, line 30-60). Araujo discloses wherein the local media gateway process media gateway control commands that are send to the local media gateway (see FIG. 9,11, edge device 405 processes signaling channel frame send to edge device 405 by utilizing packet header (see FIG. 2, header 100); see col. 6, line 15-65; see col. 7, line 30-54, 62; col. 12, line 35-65), and forwards the media gateway control commands that are send to the remote media gateway (see FIG. 9,11, edge device 405 sends signaling channel frame to r edge device 406 or RAS 408; see col. 6, line 15-65; see col. 7, line 30-54, 62; col. 12, line 35-65).

Neither Graf nor Araujo explicitly disclose “addressed” to.

However, utilizing address in the header of the signaling frame is so well known in the art. In particular, Olshansky further discloses wherein the local node process control commands

that are addressed to the local node (see FIG. 2, receiving regular node 120 processing control token if the addresses (see FIG. 2) is receiving regular node 120) and forwards the control commands that are addressed to the remote node (see FIG. 2, forwards/retransmit the token if the address (see FIG. 2) is next receiving node 130); see col. 4, line 40-60; see col. 5, line 26-60; see col. 6, line 10 to col. 7, line 35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide "addressed" to, as taught by Olshansky , in the combined system of Graf and Araujo, so that it would provide high throughput communication system; see Olshansky col. 1, line 57 to col. 2, line 36.

Response to Arguments

15. Applicant's arguments with respect to amended claims 6, 7, 10-17, 20, 21, 26, 30 and 31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to IAN N. MOORE whose telephone number is (571)272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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